Real-Time Control of Combined Sewer Networks

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Key Words: real-time control systems, wet-weather events, combined sewer overflow(CSO), sanitary sewer overflow (SSO), sewerage systems management

Real-time control (RTC) is a custom-designed management program for a specific urban sewerage system during a wet-weather event. The function of RTC is to ensure efficient operation of the sewerage system and maximum utilization of existing storage capacity, either to fully contain or significantly reduce the volume of CSOs/SSOs. During a storm event, RTC performs three main function: it routes flows, maximizes the use of existing storage within the sewerage system, and eliminates/reduces untreated overflows. A substantial cost savings can be realized by eliminating the need for new storage facilities and/or reducing the volume of additional storage that may be required. Well-designed RTC systems can be dependable and cost-effective tools for assisting sewer districts in meeting the requirements of the National CSO Control Policy and SSO Program.

The EPA's Urban Watershed Management Branch has been compiling information on the performance and cost of operating three full-scale applications of RTC- based combined sewer management systems. Two completed studies of different RTC alternatives were conducted on portions of combined sewerage systems near Paris, France, and Quebec City, Canada. A third study of a full-scale RTC system in Milwaukee, WI, has been recently modified to operate jointly on a combined sewerage system and a portion of a separate sanitary system that experiences overflows during wet-weather events. In addition, there are plans to collect performance and cost information on other operating RTC systems in the U.S. and other countries. A final report on the results of this investigation will be made available for use by the U.S. EPA (Office of Water, Regions), states, urban or metropolitan sewerage districts, and interested public.

This poster will provide an overview of the RTC concept and will present recently collected data on the performance and costs of the full-scale systems described above.